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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/798,839

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Chao-Jung Huang

LOU 117

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7590

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RABIN & Berdo, PC

1101 14TH STREET, NW

SUITE 500

WASHINGTON, DC 20005

EXAMINER

MAPLES, JOHN S

ART UNIT

PAPER NUMBER

1795

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/798,839	Applicant(s) HUANG ET AL.	
	Examiner John S. Maples	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 9-13, 16, 17 and 19-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 9-13, 16, 17, 19-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-3, 9-13, 16, 17, 19-23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Applicant is claiming in the two independent claims 1 and 16, that the cross-linked membrane encapsulates the fuel and isolates the fuel from a fuel solvent in the fuel cell. (underlining added) There is no support in the originally filed specification that the fuel solvent is present in the fuel cell. As pages 3 and 4 of the present specification set forth, the fuel solvent is present in the fuel tank, which tank does not form part of the fuel cell. In fuel cell technology, to one of ordinary skill in this art, a fuel tank would be considered to be part of a fuel cell system, but the fuel tank would not be considered to be part of the fuel cell itself.

It is also noted that each of claims 1 and 16 also recite a fuel supplying apparatus for a fuel cell. (underlining added) With this language, the fuel supplying apparatus is defined as being distinct and separate from the fuel cell and does not form part of the same.

Claims 2-3/9-13 and 17/19-23, dependent on claims 1 and 16, respectively, fall therewith.

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Applicant's arguments have all been considered but are not deemed persuasive. Applicant argues that the Abstract supports the fuel tank as part of the fuel cell. This is not convincing because the language in the Abstract does not state that the fuel tank is in the fuel cell but only that the fuel cell has a fuel tank.

Applicant further argues that page 1, lines 21-22 of the present specification sets forth the fuel tank being part of the fuel cell. Of course, most fuel cells have a fuel tank to deliver the fuel thereto, however, again there is no support in the present specification for the fuel tank being "in" the fuel cell as applicant is now claiming. As was set forth previously in this action, in fuel cell technology, to one of ordinary skill in this art, a fuel tank would be considered to be part of a fuel cell system, but the fuel tank would not be considered to be part of the fuel cell itself.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Prasad et al.-US 6,924,054. (Prasad)

Reference is made to the Abstract of Prasad along with column 2, line 48 through column 6, line 30 along with claim 29. These portions of Prasad teach a cross-linked polymer that holds the methanol fuel in area 26. It is noted that the cross-linked polymer in Prasad allows the methanol to permeate in one direction-into the super-absorbent material, and once there cannot permeate in another direction because the same is held therein, thus meeting the claimed subject matter.

Applicant's arguments have all been considered but are not deemed persuasive. Applicant argues that the super-absorbent material in Prasad does not have the characteristics of the cross-linked membrane of the present invention that is only permeable to the fuel encapsulated therein. First of all, as set forth in column 6, lines 13-21, Prasad discloses a cross-linked membrane and thus meets this claimed recitation. In addition, the fuel permeates in one direction, i.e., into the super-absorbent material and thus also meets the claimed subject matter.

It is also noted that applicant argues further in the remarks that the cross-linked membrane of the fuel supply apparatus of the present invention serves as a "one-way gate" for the controlled release of fuel into the fuel tank. The subject matter of this argument does not find support in the currently claimed subject matter and so the argument is traversed thereby.

Applicant further argues that the super-absorbent material in Prasad does not control the releasing rate of the fuel into the fuel tank via the diffusion effect. This may be true, however, as stated previously in this action, this language does not form part of the claimed subject matter and so this argument is rendered moot.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 3, 9, 16, 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prasad, taken by itself, and also taken in view of Choi et al.-US 5,314,952. (Choi)

The only claimed features not shown by Prasad are the particular claimed polymer that is cross-linked and for the membrane and the fuel to have a gel-like structure. It would have been obvious to one of ordinary skill in this art to have cross-linked the polyvinylpyrrolidone taught in column 6, line 24 of Prasad because Prasad

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provides for a cross-linked polymer in lines 20-21 in column 6 and the same would provide for enhanced properties such as absorbency of the polymer by being cross-linked. It is noted that applicant has not argued the obviousness of the cross-linked polyvinylpyrrolidone in view of the teachings of Prasad.

Choi teaches the use of a polymer, and in particular, an acrylate being an example of such polymer, for use in absorbing methanol, which polymer and fuel are gel-like-see column 3, line 62 through column 5, line 10 of Choi, and in particular, column 4, line 61 through column 5, line 10. To have formed the fuel and polymer of Prasad of a gel-like material as taught by Choi would have been obvious to one of ordinary skill in this art at the time the invention was made because the same would allow the fuel to not spill but to be contained within the polymer.

Applicant's arguments have all been considered but are not deemed persuasive. Applicant argues that Choi does not teach the cross-linked membrane that encapsulates the fuel and allows the fuel to permeate in one direction. This argument by applicant is deemed moot because the examiner did not apply the Choi reference to teach the cross-linked membrane but only applied the teachings of Choi to render obvious the membrane and the fuel to have a gel-like structure.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John S. Maples whose telephone number is 571-272-1287. The examiner can normally be reached on Monday-Friday, 8:00-4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John S. Maples/

John S. Maples
Primary Examiner
Art Unit 1795

JSM/5-25-2009